Amphiphilic Styrene-Based Pyrene Derivatives: Tunable Aggregation Luminescence and Their Photo-induced Dimerization Behavior

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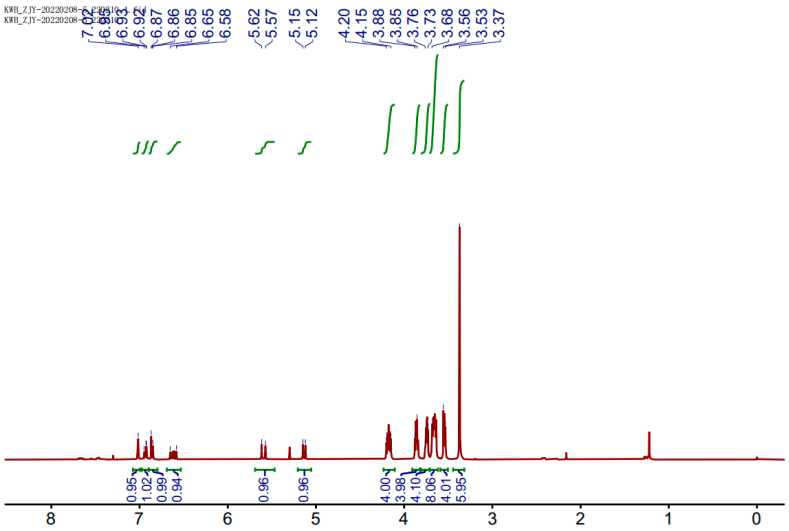


Figure. S1 ^{1}H NMR spectrum of compound **4** in $CDCl_3$ (400 MHz) at 298 K.

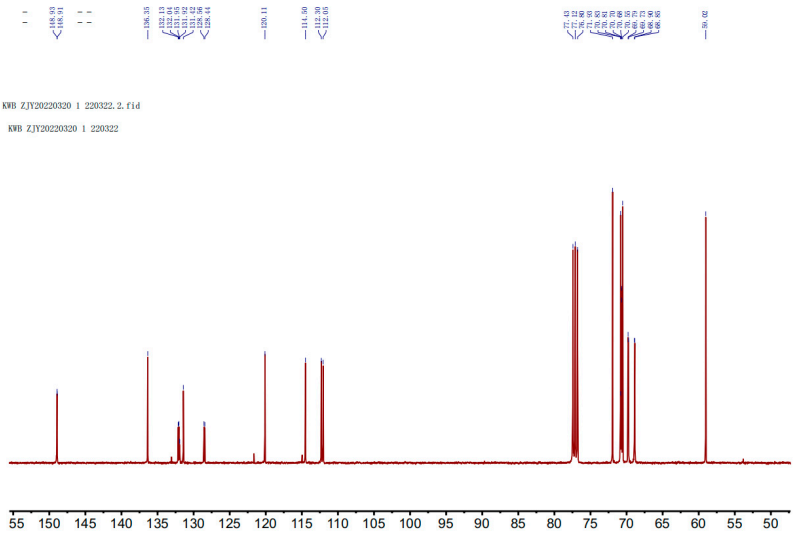


Figure. S2 ^{13}C NMR spectrum of compound **4** in $CDCl_3$ (100 MHz) at 298 K.

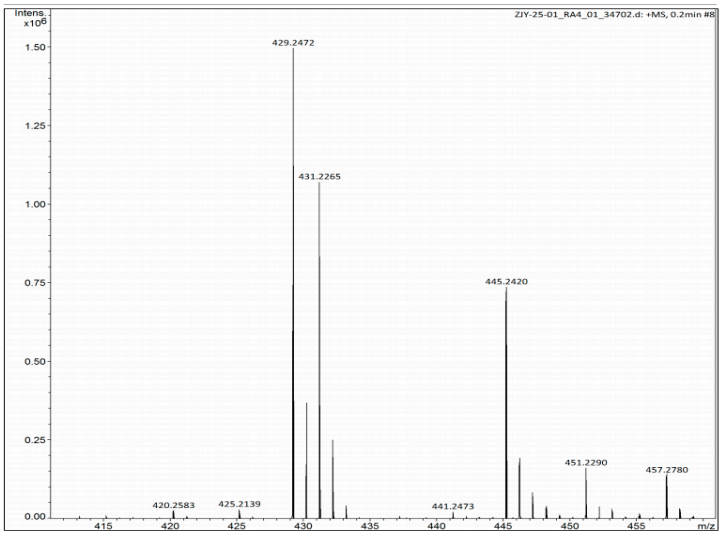


Figure S3. HR-ESI-MS spectra of compound **4**.

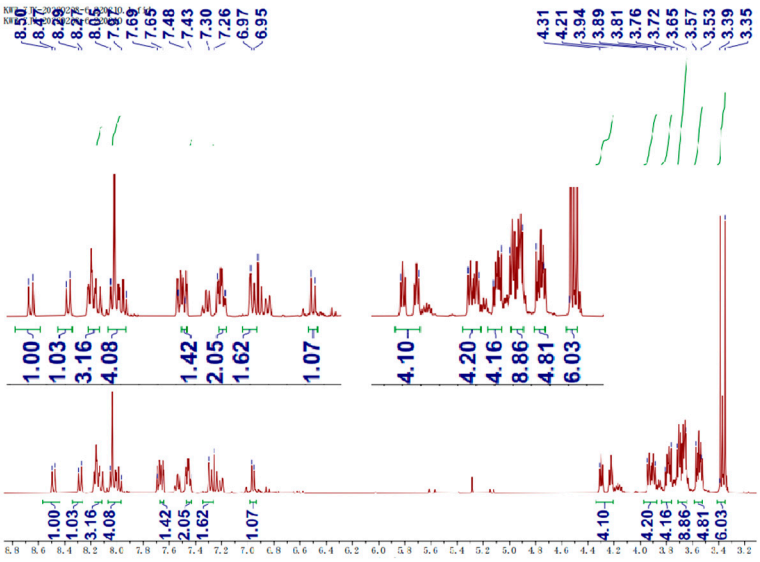


Figure. S4 ^{1}H NMR spectrum of compound **1-H** in $CDCl_3$ (400 MHz) at 298 K.

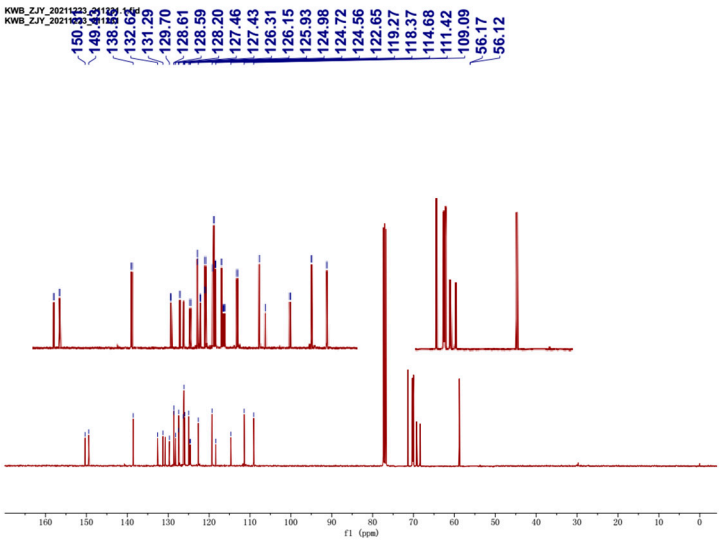


Figure. S5 ^{13}C NMR spectrum of compound **1-H** in $CDCl_3$ (100 MHz) at 298 K.

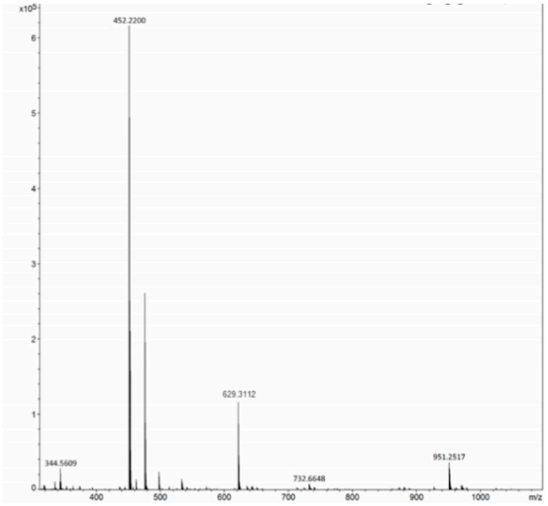


Figure S6. HR-ESI-MS spectra of compound **1-H**.

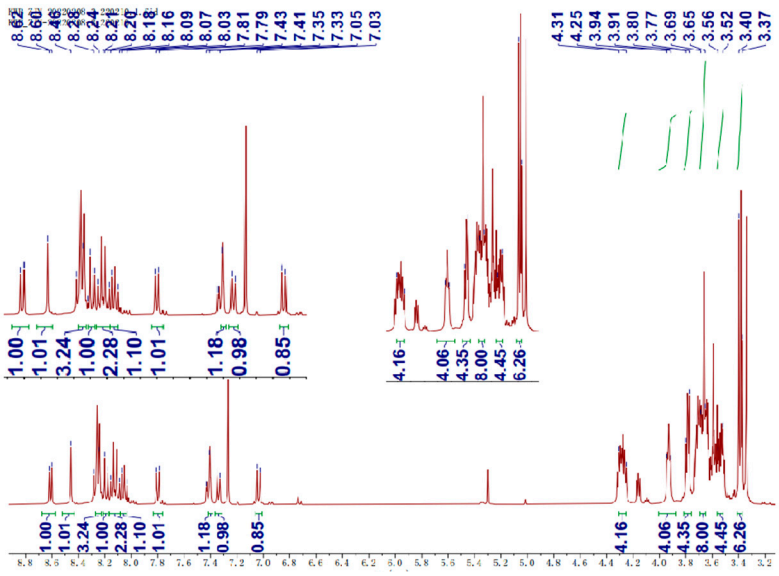


Figure. S7 ^{1}H NMR spectrum of compound **1-CN** in $CDCl_3$ (400 MHz) at 298 K.

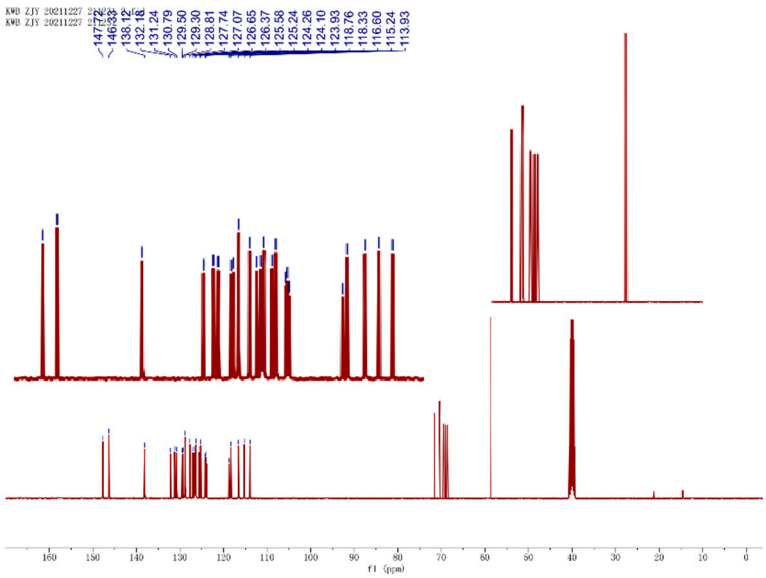


Figure. S8 ^{13}C NMR spectrum of compound **1-CN** in $CDCl_3$ (100 MHz) at 298 K.

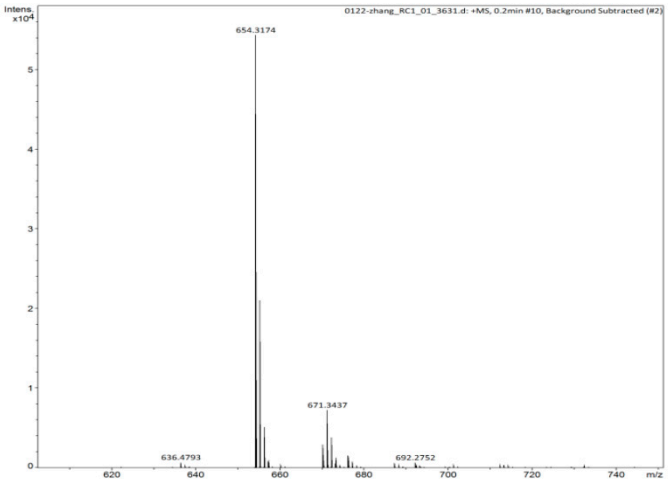


Figure S9. HR-ESI-MS spectra of compound 1-CN.

Table S1: The Photoluminescence Quantum Yield of compound **1-H** and **1-CN**

Compound	State (Solvent)	PLQY (%)
1-H	Dispersed (THF)	12.5
1-H	Aggregated (H_2O)	3.1
1-CN	Dispersed (THF)	8.1
1-CN	Aggregated (H_2O)	42.3

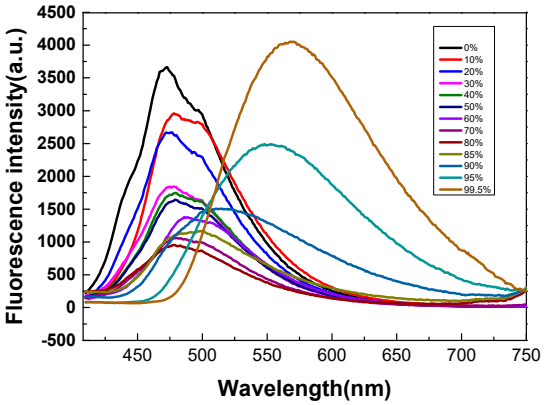


Figure S10. The emission spectra of **1-CN** in binary solvent mixtures of THF-water (λ=365nm, 1 x 10^{-5} M).

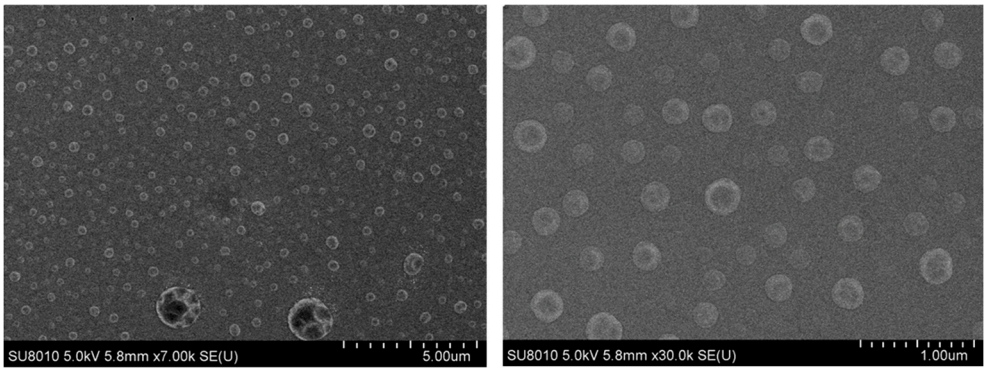


Figure S11. The SEM image of **1-H** prepared in aqueous solution.

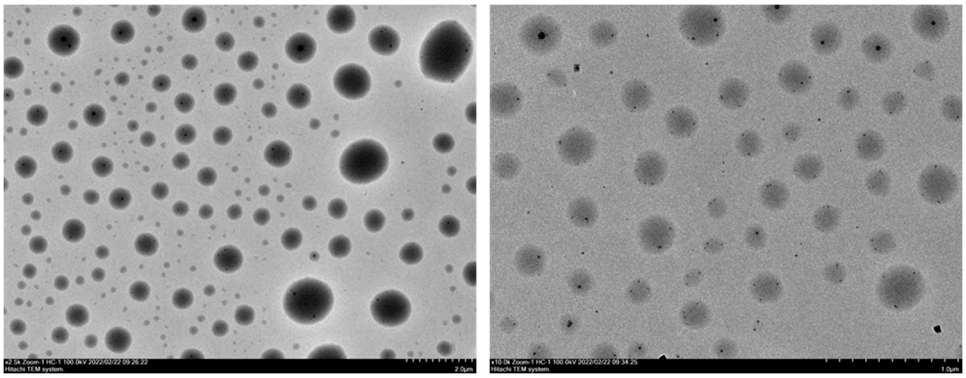


Figure S12. The TEM image of **1-H** prepared in aqueous solution.

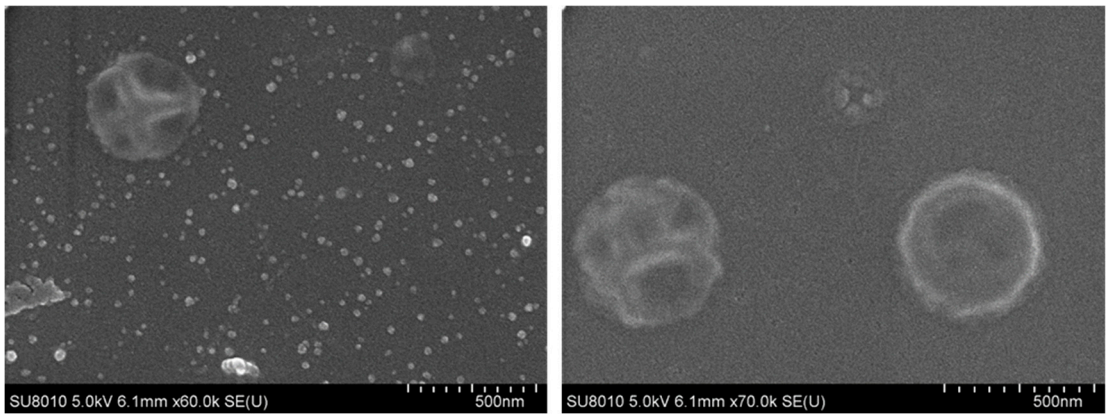


Figure S13. The SEM image of **1-CN** prepared in aqueous solution.

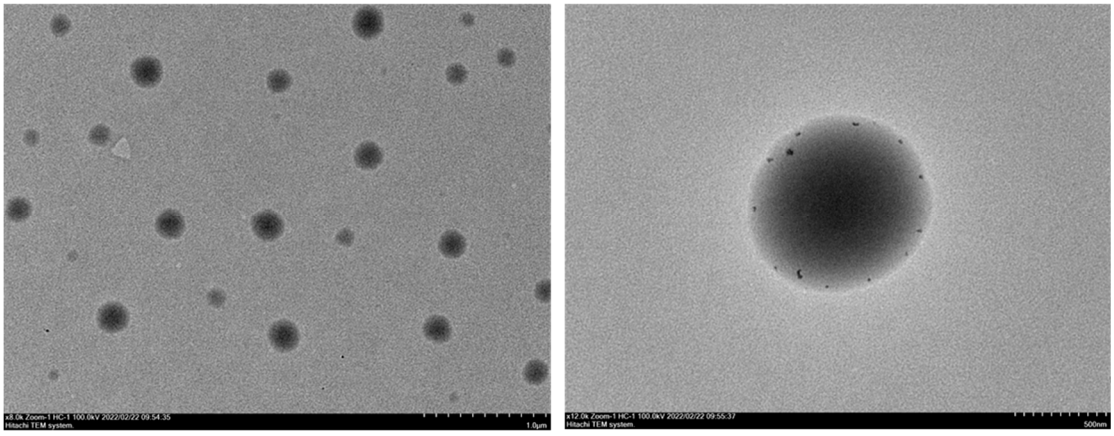


Figure S14. The TEM image of **1-CN** prepared in aqueous solution.

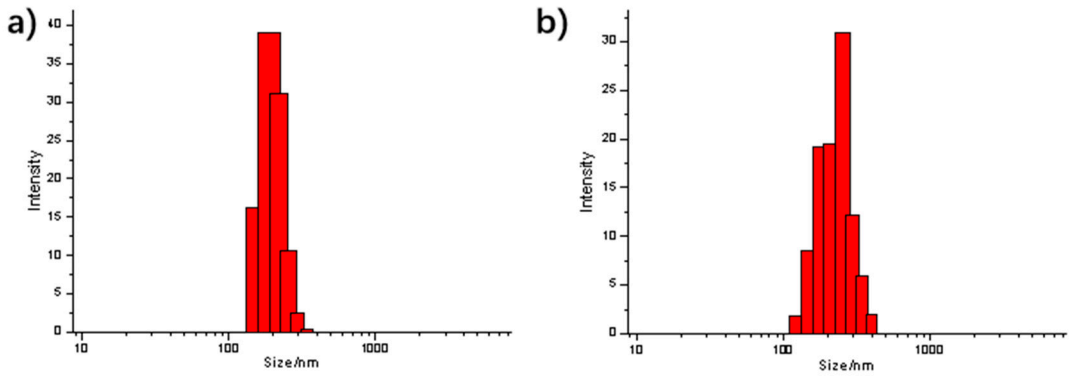


Figure S15. The DLS data of **1-H**(a) and **1-CN** (b) prepared in aqueous solution.